REMARKS

Applicant respectfully requests reconsideration as follows:

The rejection of claims 21-24 as being anticipated by Fenton (USP 5,414,729)

The Fenton reference stands in sharp contrast to the subject matter recited in claim 1: Consider Figure 2 of Fenton, which shows m correlators being used in a tracking mode (after acquisition) so as to estimate multipath. As noted by the Examiner, Fenton suggests using 19 of these correlators. Each one receives a particular PRN sequence (each being 1024 bits in length, see, e.g., Col. 8, lines 12-17) generated by shift register 250. As seen in Figure 10, the various (complete) PRN sequences generated by shift registers are delayed with respect to one another by just fractions of a chip (a single bit in the PRN sequence). That way, Fenton can analyze the overall correlation shape produced by these various correlations – if there is no multi-path, the various correlations produce the perfectly symmetrical triangular shape as shown by line 300 in Figure 6. Multipath introduces the distortions seen, for example, by line 304 in Figure 6.

But such correlation is just an extended version of what takes place in any conventional GPS tracker: in general, you will need a first correlator (denoted as the early correlator) ½ chip or so advanced from a center correlator that is followed by a final correlator (denoted as the late correlator) ½ chip or so delayed from the center correlator. In this fashion, using feedback, you maintain tracking on the acquired signal. Fenton expanded this so he could study the overall correlation function over a 2 chip range at 2/19 chip spacings as seen in Figure 10 so as to detect whether multipath is present. Because Fenton is generating the PRN codes as the full 1024 bit sequences, it can be immediately seen that correlators 240-1 through 240-m of Figure 2 are correlating a 1024 bit received signal with these 1024 bit replicas generated by shift register 250. The assertion that the bit signals π_0 to π_P from element 222p of Figure 3 are related to the number of bits in the received signal being correlated is not correct: as discussed for example on Col. 6, lines 56-58, Fenton uses these bits to signify the instantaneous carrier phase – such phase having nothing to do with the number of bits in the received signal being correlated. Instead, Fenton just performs the standard 1024 bit correlation on a received signal that is also 1024 bits in length.

Claim 1, therefore, clearly defines a much different type of correlator: Fenton is performing standard tracking correlation on a single 1024 bit sequence received signal that is correlated 19 ways whereas claim requires the formation of x multibit digital segment values. As discussed, for example, on page 30, line 36 to page 31, line 18 of the specification, in this fashion the Applicants greatly increase re-acquisition times should tracking be lost (as is often the case due to noise, environmental effects, etc.).

Accordingly, claim 21 and its dependent claims 22-32 are allowable over Fenton.

The rejection of claims 25-32 as being unpatentable over Fenton

As discussed above, independent claim 21 patentably defines over Fenton. Because claims 25-32 depend ultimately or directly on claim 21, claims 25-32 are allowable over Fenton for at least the reasons claim 21 is allowable.

For the foregoing reasons, the pending claims are in condition for allowance.

If the Examiner has any questions or concerns, a telephone call to the undersigned at (949) 752-7040 is welcomed and encouraged.

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I hereby certify that this correspondence is being facsimile transmitted to the United States Patent and Trademark Office, Fax. No. 571-273-8300, on the date shown below.

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November 30, 2007

Respectfully submitted,

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